

REMARKS

Applicants have amended the claims to more particularly define the invention taking into consideration the outstanding Official Action. Applicants have added new claims 32-45 to the application. Claims 32-38 correspond to claims 25-31 but add the closed transition phrase "consisting of" in place of "comprising". Claims 39-45 also parallel claims 25-31 but make it absolutely clear that the layers are contiguous as fully supported by Applicants' specification and as shown in Figure 2 of the present application.

The rejection of claims 25-26, 28 and 31 under 35 U.S.C. 102(e) as being anticipated by Yu et al. has been carefully considered but is most respectfully traversed. Applicants wish to direct the Examiner's attention to MPEP § 2131 which states that to anticipate a claim, the reference must teach every element of the claim.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed.Cir. 1990).

In the Official Action, it is urged that Yu et al. discloses a sandwich dielectric structure having a first dielectric layer 3 having a thickness within 100-700 nm formed on a substrate; a silica layer 4 having a thickness of 100 nm formed on the first dielectric layer 3; and a second dielectric layer 6 having a thickness within 100-700 nm formed on the silicon layer. Specific reference is made to column 3, lines 23-66 and Figure 6 of the patent. This has been carefully considered but is most respectfully traversed.

In column 3, lines 23-66 and Figure 6 of the cited '663 reference, there is a silicon oxynitride layer 5 having a thickness of 500-1000 Å (50-100 nm) between the silica layer 4 and the second dielectric layer 6. That is between the first and second dielectric layers 3 and 6 there are two layers (the PECVD FSG layer 4 and silicon oxynitride layer 5) in '663. Claim 25 of the present application recites only one layer between the two dielectric layers. This is a claim limitation which cannot be ignored.

The thickness of the PECVD FSG layer 4 is 1000-5000 Å (100-500 nm), and the thickness of the silicon oxynitride layer 5 is 500-1000 Å (50-100 nm) in '663. That is, the minimum thickness of the layers 4 and 5 is 150 nm in '633, which is much greater than the thickness of 5-100 nm of the LPD silica layer recited in Claim 25 of the present application.

The Examiner notes in the Official Action the term "LPD" has been considered but it is not structurally distinguished over the applied art. Applicants most respectfully submit that claim limitations simply cannot be ignored. As stated in the paragraph bridging pages 1 and 2 of Applicants' specification, the present invention provides a technique to reduce stress of a thick spin-on dielectric layer by forming a sandwich dielectric structure, wherein a first dielectric layer is formed on a substrate by spin coating, a liquid phase deposited (LPD) fluorosilicate glass (FSG) layer is formed on the first dielectric layer and a second dielectric layer is formed on the LPD silica layer by spin coating. The LPD silica layer can be further subjected to a nitrogen plasma treatment so that the whole FSG film is nitridized to prevent movable ions from penetrating through, and enhance thermal stability and anti-water migration ability in effectiveness, and thus, the reliability of the spin-on dielectric layer can be improved greatly. As a result, the spin-on dielectric layer will have a higher potential in more applications. Thus, these are important aspects of the invention and are claim limitations which cannot be ignored contrary to the assertion in the Official Action. Accordingly, it is most respectfully requested that the anticipation rejection be withdrawn.

The rejection of claim 27 under 35 U.S.C. 103 as being unpatentable over Yu et al. in view of Shields et al. has been carefully considered. Yu et al. is said to disclose the invention substantially as claimed. This conclusion is specifically traversed. In this

regard, Applicants wish to direct the Examiner's attention to the basic requirements of a prima facie case of obviousness as set forth in the MPEP § 2143. This section states that to establish a prima facie case of obviousness, three basic criteria first must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Section 2143.03 states that all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Applicants most respectfully submit that Yu et al. does not teach the dielectric layers 3 and 6 made from MSG. It is urged that Shields et al. disclose a structure having a dielectric layer 12 made from MSG or HSG. Specific reference is made to column 6, lines 50-53. This rejection has been carefully considered but is most respectfully traversed as the deficiencies of the secondary reference do not overcome the primary reference. There is no motivation to remove layer 5 as shown in the reference and to form the presently claimed invention whether or not the dielectric layers are formed with MSG or HSG. Since the secondary reference fails to overcome the deficiency of the primary reference, the rejection is not tenable and should be withdrawn.

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The rejection of claims 29 and 30 under 35 U.S.C. 103(a) as being unpatentable over Yu et al. stating that Yu et al. does not explicitly teach the specific concentration of nitrogen and fluorine in the silica layer when the silica layer 4 is subjected to nitrogen plasma treatment. It is concluded that it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the invention of Yu et al.

with the specific range of concentrations for the nitrogen and fluorine in the silica layer since it is prima facie obvious.

In this rejection it is urged that the courts have concluded that there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. However, the motivation to make the necessary modification to eliminate layer 5 which is specifically described as being present, must be found in the prior art. There is no suggestion to make the necessary elimination to arrive at the presently claimed invention. This is particularly true in view of the unique combination of properties exhibited by the presently claimed product. In re Fritch, 23 USPQ 1780, 1784(Fed Cir. 1992) ("It is impermissible to engage in hindsight reconstruction of the claimed invention, using the applicant's structure as a template and selecting elements from references to fill the gaps."). Accordingly, it is most respectfully requested that this rejection be withdrawn.

In view of the above comments and further amendments to the claims, favorable reconsideration and allowance of all the claims now present in the application are most respectfully requested.

Respectfully submitted,
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